

the layers are used in displays having an array of pixels, each pixel having three sub-pixels, where the adjacent pixels have reversed sub-pixel patterns such that adjacent pixels have reflective color portions two sub-pixel widths in size, half in each pixel, for ease of manufacture.

27. A reflective cholesteric liquid crystal color filter as in claim 8 wherein,

the layers are used in displays having an array of pixels, each pixel having three sub-pixels, where the adjacent pixels have reversed sub-pixel patterns such that adjacent pixels have reflective color portions two sub-pixel widths in size, half in each pixel, for ease of manufacture.

28. A reflective cholesteric liquid crystal color filter as in claim 12 wherein,

the layers are used in displays having an array of pixels, each pixel having three sub-pixels, where the adjacent pixels have reversed sub-pixel patterns such that adjacent pixels have reflective color portions two sub-pixel widths in size, half in each pixel, for ease of manufacture.

29. A reflective cholesteric liquid crystal color filter as in claim 1 wherein,

a display having rows and columns of sub-pixels for a display array has

at least two rows and at least two columns of two layers of reflecting color filters for pixels such that there are four sub-pixels per pixel.

30. A reflective cholesteric liquid crystal color filter as in claim 29 wherein,

each pixel has a red, a green, a blue and a white transmitting sub-pixel.

31. A reflective cholesteric liquid crystal color filter as in claim 29 wherein,

at least two adjacent sub-pixels in a layer have the same color for ease of manufacturing the displays.

32. A reflective cholesteric liquid crystal color filter as in claim 29 wherein,

at least one row of adjacent sub-pixels in a layer have the same color for ease of manufacturing the displays.

33. A reflective cholesteric liquid crystal color filter as in claim 29 wherein,

at least one column adjacent sub-pixels in a layer have the same color for ease of manufacturing the displays.

34. A reflective cholesteric liquid crystal color filter as in claim 1 wherein,

the light entering the reflective cholesteric liquid crystal color filter emanates from a backlight and is collimated in a collimator and then enters a reflective polarizer for providing a wide viewing angle without color distortion in the reflective cholesteric liquid crystal color filters,

the light then enters the reflective cholesteric liquid crystal color filter were the adjacent first and second layer reflecting portions reflect different wavelengths of incident light of the same handedness and transmit the remaining wavelengths,

the transmitted light enters a quarter wave plate to be linearly polarized,

the linearly polarized light then enters a liquid crystal light valve to selectively pass light therethrough,

light passing through the light valve passes through an analyzer and a diffuser to illuminate a color display.

35. A reflective cholesteric liquid crystal color filter as in claim 2 wherein,

the light entering the reflective cholesteric liquid crystal color filter emanates from a backlight and is collimated in a collimator and then enters a reflective polarizer for providing a wide viewing angle without color distortion in the reflective cholesteric liquid crystal color filters,

the light then enters the reflective cholesteric liquid crystal color filter were the adjacent first and second layer reflecting portions reflect different wavelengths of incident light of the same handedness and transmit the remaining wavelengths,

the transmitted light enters a quarter wave plate to be linearly polarized,

the linearly polarized light then enters a liquid crystal light valve to selectively pass light therethrough,

light passing through the light valve passes through an analyzer and a diffuser to illuminate a color display.

36. A reflective cholesteric liquid crystal color filter as in claim 7 wherein,

the light entering the reflective cholesteric liquid crystal color filter emanates from a backlight and is collimated in a collimator and then enters a reflective polarizer for providing a wide viewing angle without color distortion in the reflective cholesteric liquid crystal color filters,

the light then enters the reflective cholesteric liquid crystal color filter were the adjacent first and second layer reflecting portions reflect different wavelengths of incident light of the same handedness and transmit the remaining wavelengths,

the transmitted light enters a quarter wave plate to be linearly polarized,

the linearly polarized light then enters a liquid crystal light valve to selectively pass light therethrough,

light passing through the light valve passes through an analyzer and a diffuser to illuminate a color display.

37. A reflective cholesteric liquid crystal color filter as in claim 29 wherein,

the light entering the reflective cholesteric liquid crystal color filter emanates from a backlight and is collimated in a collimator and then enters a reflective polarizer for providing a wide viewing angle without color distortion in the reflective cholesteric liquid crystal color filters,

the light then enters the reflective cholesteric liquid crystal color filter were the adjacent first and second layer reflecting portions reflect different wavelengths of incident light of the same handedness and transmit the remaining wavelengths,